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SNHU- CS330

In my 3D scene, I decided to include a tissue box, lemon, coffee mug, and pencil placed on a wooden plane. I chose these objects because they provided an opportunity to implement various complex shapes into my 3D OpenGL project and showcase the skills I've acquired. By incorporating these objects, I aimed to demonstrate my understanding of rendering and placing shapes, utilizing light sources, and texturing objects.

Throughout the development process, I gained a deeper understanding of how functions such as shaders, textures, light sources, and input devices work together. Through trial and error, I honed my knowledge and improved my ability to manipulate these elements effectively. For instance, when creating the coffee mug, I utilized a cylinder shape for the main body and added a stretched torus as the handle. To enhance the visual appeal, I decided to texture the top of the mug to resemble coffee, rather than leaving it empty. This choice was made with the intention of creating a more realistic and captivating overall look for the scene.

In terms of user navigation, I implemented controls using the WASD keys. This allows users to move the camera forward, right, left, and backward within the 3D scene. Additionally, I incorporated the E key to move the camera up and the Q key to move it down. To provide users with more flexibility, I enabled the mouse scroll wheel to adjust the camera movement speed. These additional functionalities aim to offer users a greater sense of control and immersion within the 3D environment.

To ensure a modular and organized code structure, I incorporated various custom functions throughout my program. For example, I implemented functions specifically designed to handle shaders, process user input, render the scene, and set up the window. By encapsulating these functionalities into separate functions, I made the code more reusable and easier to modify for future projects or similar setups. However, upon reflection, I realized that in my "Urender" function, I could have further improved the modularity by creating separate functions for creating each specific shape. By doing so, I would have made the code more reusable and provided others with greater flexibility to make changes to the code in the future.

In summary, my 3D scene featuring a tissue box, lemon, coffee mug, and pencil on a wooden plane allowed me to showcase my knowledge of complex shapes, rendering, light sources, and texturing in a 3D OpenGL project. The user navigation was designed to provide a sense of control and immersion, utilizing keys and mouse input. The code was organized using custom functions for different functionalities, making it more modular and reusable. Overall, the development choices I made were aimed at demonstrating my skills and creating an engaging and visually appealing 3D scene.